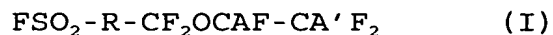


CLAIMS

1. A process for preparing (per)fluorohalogenethers containing the $-\text{SO}_2\text{F}$ group and having general formula (I):



wherein:

- A and A', equal to or different from each other, are Cl or Br;
- R can have the following meanings: a (per)fluorinated, preferably perfluorinated, substituent, selected from the following groups: linear or branched C_1-C_{20} alkyl, C_3-C_7 cycloalkyl; aromatic, C_6-C_{10} arylalkyl or alkylaryl; C_5-C_{10} heterocyclic or alkylhetero-cyclic; optionally containing one or more oxygen atoms; when R is fluorinated, it can optionally contain one or more H atoms and/or one or more halogen atoms different from F;

by reaction of carbonyl compounds having formula (II):



wherein R is as above;

in liquid phase with elemental fluorine and with olefinic compounds having formula (III):



wherein A and A' are as above,

by operating at temperatures from -120°C to -20°C , preferably from -100°C to -40°C , optionally in the presence of a solvent inert under the reaction conditions.

2. A process according to claim 1, wherein the fluorine is diluted with an inert gas selected between nitrogen or helium.
3. A process according to claims 1-2, wherein the formula (III) compounds are selected from 1,2-dichloro-1,2-difluoroethylene (CFC 1112), 1,2-dibromo-1,2-difluoroethylene, preferably CFC 1112.
4. A process according to claims 1-3, wherein the solvent is selected from the group comprising the following compounds: (per)fluorocarbons, (per)fluoroethers, (per)fluoropolyethers, perfluoroamines, or respective mixtures; fluoropolyethers containing at least one hydrogen atom in one end group, preferably in both end groups; fluoroethers containing at least one hydrogen atom in one end group, preferably in both end groups, or containing non fluorinated end groups of the type OR_a wherein R_a is an alkyl from 1 to 3 carbon atoms.
5. A process according to claims 1-4, wherein, when R in formula (I) is fluorinated, it optionally contains one or more H atoms and/or one or more halogen atoms different

from F, preferably Cl.

6. A process according to claims 1-5 carried out in a semi-continuous or a continuous way.
7. A semicontinuous process according to claim 6, wherein the molar ratio (II):(III) ranges from 10:1 to 1:20 and the used amount by moles of fluorine is equal to or lower than the amount by moles of (III).
8. A continuous process according to claim 6, wherein the molar ratio (II):(III) is as defined in claim 7 and the molar ratio F_2 :(III) ranges from 1:20 to 10:1.
9. A process according to claims 1-8, wherein one operates at partial conversion of compound (II), preferably the conversion ranges from 10% to 40%, still more preferably from 10% to 20%.
10. A process according to claims 1-9, wherein the dehalogenation step is carried out to obtain the fluorinated vinyl ethers.